other persons in enjoyment of forest privileges. The extent of the operations, and the value of free labour availed of for this purpose, is shown below :—

Division.	No. of boundary marks put up and repaired.	Length of boundary paths cleared and repaired.	Estimated value.
	Miles.	Miles.	Rs. a. p.
Sukkur	7,157	948	1,395 0 0
Naushahro	2,878	20	404 0 0
Hyderabad	1,931	260	984 0 0
Jerruck	2,409	178	819 0 0
Total ...	14,375	1,406	3,602 0 0

38. The riverain forests having been flooded to a greater extent than in the previous year, the number of marks replaced or repaired, as well as the length of the boundary paths cleared, was in excess of the year 1895-96 by 2,554 and 922 miles, respectively.

IV.—Surveys.

Surveys.

39. The Forest Survey branch parties of the Government of India have not yet commenced operations in this Circle. The Riverain Survey has been completed, and the maps prepared have been found to be of great use.

CHAPTER II.

Management of State Forests.

I.—Regulation and Management.

(a) Working Plans and their Control.

Preparation of Working Plans.

40. During the year under report, it might be said the year in which a separate Division for preparing Working Plans came into existence, it was not possible for the officers in charge, Messrs. Napier and Dalal, to undertake more work than was done. After completing the demarcation referred to in paragraph 34, work was commenced in the Sukkur Division at the beginning of January 1897 with a view to the organisation of the Rohri, Dubar Wahan, Katha, Changni, and Hingora Forest Reserves in the Sadhuja Range, which, besides being in close proximity of the North-Western Railway line, come within the direct influence of the annual floods and at the same time, being safe from erosion, are not subject to fluctuations in area. The object of taking these areas first in hand is not simply because they play at present a very important part in the fuel supply of the North-Western Railway and the Quetta Commissariat, but chiefly to carry out the intention I have had all along in view to convert them gradually into babul (Acacia Arabica) and tali (Dalbergia Sissoo) forests by systematic cultural operations, as they are capable of being stocked with these valuable species in place of the existing growth of kandi (Prosopis Specigera) and lye (Tamarix Gallica). This work was finished by the middle of March, when, at the Commissioner's request, Mr. Napier's services were lent for Plague duty, and he was placed under the orders of the Sukkur Plague Committee. Mr. Dalal, Divisional Forest Officer, Hyderabad, then took charge of the Working Plans office in addition to his own, and before the close of the tour season made a survey in advance of the Miani, Muhammad Khan, Kathri, and Matiari babul reserves in order that correct maps may be ready to enable the organisation of these very valuable State properties being taken in hand at the commencement of the following working season.

41. Mr. Napier's operations extended over an area of 17,000 acres, and the details of the work performed by him during the two months and a half he was engaged on it are briefly as follow :—

Details of the work done by the Working Plans Officer.

(i) A careful examination of the forests to compare the growing stock with the estimates thereof as made in the previous year by the Divisional Forest Officer, Sukkur.

(ii) Preparation of correct maps, showing boundaries and compartment lines accurately, a point in which the old maps failed signally.

(iii) Recalculation of area according to the fresh maps.

(iv) The formation of Working Circles and the splitting up of the Circles into "affectations", or periodic blocks, (three in number), corresponding to each period of the rotation.

(v) The selection of the coupes (5) for the first period.

(vi) The marking off on the ground of the first year's coupes.

42. The Working Plans staff sanctioned for the year numbered six Surveyors, one on the permanent establishment and five on the temporary list, but in the past year considerable difficulty was experienced in obtaining qualified men, and it was seldom that the full complement was employed, the difficulty being doubtless increased by the presence of the famine and plague, as one man resigned in December 1896 on obtaining a more lucrative post on Famine Relief Works in the Deccan.

Details of work performed by the Working Plans staff.

43. During the recess season, this staff was employed in preparing fresh maps of the forests of the Circle, five copies of each map being made for the use of the different officers, including a vernacular copy for Sub-Rangers. Of the Surveyors available in the working season, two were employed directly under Messrs. Napier and Dalal for demarcation and organisation, and one Surveyor was attached to each of the Sukkur, Naushahro and Hyderabad Divisions to Survey the river boundary and correct the existing maps as well as to mark out the coupes to be exploited in 1897-98. For the fourth division, Jerruck, no Surveyor could be spared at any time during the season, and therefore both the operations were undertaken by trained Range Forest Officers. A complete statement of the work performed appears as under :—

Details of the work turned out by the Working Plans staff.

Division.	By Working Plans Staff.							By Executive Staff.					
	No. of copies of maps prepared.	Length of river frontage surveyed.		No. of copies.	Area of the coupes marked out.		Cost of all the work done.	Length of river frontage surveyed.		No. of coupes.	Area of the coupes marked out.		Cost of the work done.
		Miles.	Yards.		Acres.	Guntas.	Rs. a. p.	Miles.	Yards.		Acres.	Guntas.	Rs. a. p.
Sukkur	33	25	1,496	7	1,022	10	13 8 0	...	...	41	4,953	...	...
Naushahro	58	54	1,617	39	3,836	8	...	...	...	1	819	5	...
Hyderabad	120	75	836	26	3,081	22	...	...	...	..	...	...	...
Jerruck	167	...	...	...	...	...	...	6	880	25	3,126	31	...
Total ...	378	156	429	72	7,940	...	13 8 0	6	880	67	8,898	36	..

44. All the reserves capable of being exploited systematically in the several divisions have been roughly differentiated into Working Circles on the maps and are placed under rational treatment.

45. The breaking up of forests into compartments was purposely allowed to stand over, as, under the orders of Government contained in their Resolution No. 3822 in the Financial Department, dated 11th November 1896, owing to pressing demands on the Treasury, all avoidable expenditure had to be postponed.

Cutting up of Reserves into compartments.

During the year, only 56 miles of compartment lines as against 152 in the previous year were cut and cleared, at an average cost of Rs. 9-12-3 per mile, which cost rate is in excess of that of the last year by about Rs. 2 in consequence of the difficulty of procuring labour at reasonable rates, due to the outbreak of the plague.

Progress made in cutting up forests into compartments.

46. The year's work and that remaining to be done is exhibited in the following statement:—

Division.	Area cut up into compartments up to 1st July 1896.		Area cut up during 1896-97.		Total area cut up into compartments.		Area still remaining to be cut up.
	Acres.	Length in miles of rides 20 feet wide.	Acres.	Length in miles of rides 20 feet wide.	Acres.	Length in miles of rides 20 feet wide.	Acres.
Sukkur ...	*203,307	1,310	5,870	17	209,177	1,327	78,541
Naushahro ...	*83,764	523	1,668	4	85,432	527	71,368
Hyderabad ...	103 055	530	5,022	29	108,077	559	10,900
Jerruck ...	96,196	561	1,200	6	97,396	567	20,070
Total ...	486,322	2,924	13,760	56	500,082	2,980	180,879

* Disforested area has been excluded.

(b) Annual Plans of Operations.

Annual Plans of Operations.

47. The provision of the plans it was somewhat difficult, in a year like that of 1896-97 in which pestilence raged throughout the province, to adhere to. When quarantine and other restrictions were first imposed, there was a wide spread scare among-t the coupe contractors and their work people, which was with considerable difficulty somewhat appeased. Operations in some forests actually came to a stand still, and additional time to exploit the remaining material in such coupes as were left wholly or partially unworked at the expiry of the contract period had to be granted.

II.—Working of the year.

(a) Communications and Buildings.

(1) Roads.

Roads.

48. As explained in paragraph 39 of the Administration Report for the year 1894-95, hardly any necessity exists for undertaking the construction of any expensive forest roads.

(2) Buildings.

Buildings.

49. The expenditure on buildings as compared with that of the previous year was as follows:—

Year.	New work.	Repairs.	Total.
	Rs.	Rs.	Rs.
1895-96 ...	212	335	547
1896-97 ...	122	335	457

50. A good deal of work remains to be done in all divisions under this head in building quarters for the subordinate staff. In this respect, the Jerruck Division is the worst, in which during the year three new *landhis* were erected at a cost of Rs. 122.